What is claimed is:

1. A polyolefin resin composition comprising modified layered silicate, modified polyolefin resin and polyolefin resin, wherein the modified polyolefin resin has a carboxylic acid modification degree (Pc1) of 0.030 to 0.100, which is obtained from infrared absorption spectrum using Equation (1), and a hydrogen bonding carboxyl modification degree (PcH) of 0.80 or more, which is obtained using Equation (2).

$$Pc1 = ICO3/ICH_2 \quad (1)$$

$$PcH = ICO2/(ICO1 + ICO2) \quad (2)$$

wherein

ICH_2: Infrared absorption peak at 2920 cm^{-1}

ICO1: Infrared absorption peak at 1780 to 1790 cm^{-1}

ICO2: Infrared absorption peak at 1710 to 1720 cm^{-1}

ICO3: ICO1 + ICO2

2. The polyolefin resin composition according to claim 1, wherein a composition mass ratio of the modified layered silicate/the modified polyolefin resin/the polyolefin resin is 0.01-40/0.1-50/50-99.89.

3. The polyolefin resin composition according to either of claims 1 and 2, wherein the modified layered silicate is prepared by interlayer insertion process comprising inserting a non-ionic surfactant into the interlayer spaces of the layered silicate.

4. The polyolefin resin composition according to any of claims 1 to 3, wherein the polyolefin resin is a polyethylene resin.

5. A process for preparing the polyolefin resin composition according to any of claims 1 to 4, which process comprises melt compounding the modified layered silicate, the modified polyolefin resin and the polyolefin resin.